

CLAIMS

1. An energy guide chain system (1) comprising an energy guide chain (3) for guiding cables (4), hoses or the like between a stationary (5) and a movable connection point (6), an entrainment portion (7) to which the energy guide chain (3) is connected by way of the movable connection point (6), and a guide channel (8) which has a hollow profile with a passage (9) extending in the longitudinal direction for the entrainment portion (7), wherein the energy guide chain (3) is guided in the guide channel (8) in the longitudinal direction thereof in the form of two runs (10) which are guided in mutually parallel relationship and which are connected to each other by way of a deflection region (11), characterised in that the entrainment portion (7) has a movable arm (12) which projects from the guide channel (8) with a fastening side (13) for connection to an apparatus movable relative to the guide channel (8), wherein the spacing between the fastening side (13) and the guide channel (8) is variable in a travel component in transverse relationship with the longitudinal direction of the guide channel (8).

2. An energy guide chain system according to claim 1 characterised in that the entrainment portion (7) has a sliding block (15) which is connected to the movable arm (12) and which forms the movable connection point (6) and is arranged displaceably in the passage (9) of the guide channel (8).

3. An energy guide chain system according to claim 1 or claim 2 characterised in that the movable arm (12) is in the form of a telescopic arm (26).

4. An energy guide chain system according to claim 3 characterised in that the telescopic arm (26) has an outer U-shaped telescopic member (27) and an inner U-shaped telescopic member (28), which are arranged displaceably one within the other by way of a tongue-and-groove connection.

5. An energy guide chain system according to claim 1 or claim 2 characterised in that the movable arm (12) is in the form of a sliding arm (16) which is connected displaceably in its longitudinal direction to the movable connection point (6).

6. An energy guide chain system according to claim 5 characterised in that the sliding arm (16) has a slot (17) which extends in its longitudinal direction and through which extends a pin (18) which is fixedly connected to the movable connection point (6).

7. An energy guide chain system according to claim 1 or claim 2 characterised in that the movable arm (12) is in the form of a pivot arm (23) which at the fastening side (13) is pivotably connected by way of a joint (24) to a holding portion (25) which can be connected to the movable apparatus, and which with its side towards the movable connection point (6) is pivotably connected by way of a further joint (24) to a holding portion (25) connected to the movable connection point (6).

8. An energy guide chain system according to claim 7 characterised in that the joints (24) are in the form of ball joints (25).

9. An energy guide chain system according to one of claims 1 to 8 characterised in that the movable arm (12) has a channel (22) for guiding the cables (4), hoses and the like from the movable connection point (6) to the fastening side (13).

10. An energy guide chain system according to claim 9 characterised in that arranged in the channel (22) is an energy guide chain (3) for receiving the cables (4), hoses and the like, which in the channel (22) is fixedly connected at the fastening side (13) of the movable arm (12) and which is connected at its movable end to the movable connection point (6).

11. A sliding door system for a vehicle comprising a vehicle body (31) which has a door opening (30), and a sliding door (14) which for opening and closing is displaceable along a path (V) which is non-linear relative to the vehicle body (31), characterised by an energy guide chain system (1) according to one of claims 1 to 10, which is arranged adjoining the door opening (30) in the vehicle body (31) or the sliding door (14) and serves for guiding cables (4), hoses or the like from the vehicle body (31) to the sliding door (14), wherein the sliding door (14) or the vehicle body (31) respectively forms the apparatus which is movable relative to the guide channel (8).

12. A sliding door system according to claim 11 characterised in that provided adjoining the door opening (30) of the vehicle body (31) and extending in parallel relationship with the path (V) of the sliding door (14), which is non-linear relative to the vehicle body (31), is at least one correspondingly non-linear guide rail (29) in which the sliding door (14) is mounted displaceably by way of a holding apparatus.

13. A sliding door system according to claim 12 characterised in that the holding apparatus has a holding arm (32) which is fastened in the region of the sliding door (14), which is the leading region in the direction of travel of the vehicle, which holding arm at its free end has a pinion (33) drivable by way of a motor drive arranged in the sliding door (14), and that provided in the guide rail (29) is a rack into which the pinion (33) engages for displacement of the sliding door (14).

14. A sliding door system according to claim 13 characterised in that the rack and the guide rail (29) are made in one piece.

15. A sliding door system according to claim 13 or claim 14 characterised in that the rack and the guide rail (29) are made from plastic material.

16. A sliding door system according to one of claims 12 to 15 characterised in that the holding apparatus has a pivot stirrup (34) which is fastened in the region of the sliding door (14), which is the rear region in the direction of travel of the vehicle, which pivot stirrup is pivotably connected to the sliding door (14) about a respective pivot axis which is perpendicular in the installation position and is pivotably and slidably mounted with the other end in a further guide rail (29).